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I. *A Letter from the Reverend Mr William Derham to the Publisher, concerning an Insect that is commonly called the Death-Watch:*

Upminster, July 21. 1701.

S I R,

**I** Confess I am not so well acquainted with Books, which treat of *Insects*, to know whether the account which I now send you, concerning *Death-Watches*, be a Novelty, or not. The name of *Death-Watches* is common enough, and their noise terrible to many, who look upon it as the sound of the dreadful Messenger of Death, little imagining it to be only a sportive exercise of a very common *Insect*.

Of these *Death-Watches* (or *Insects* which make a noise like the Beats of a Watch) I have observed two sorts. One of them I find a very exact and true account of in *Philos. Transf.* No 245. The *Insect* there described being less shy, and much bigger than the other, I discovered some years ago. This year I caught many in *May*, in my Study: two of which (a Male and Female) I kept alive in a little Box about 3 weeks; and could make one of them beat whenever I pleased, by imitating his beating. At last one died, the other gnawed his way out thro the side of the Box.

The reason why I judge these to be Male and Female is, because I have often by my Ticking noise invited the Male to get up upon the other in way of Coition. That which I took to be the Male, was somewhat lesser than the other, and was most free in answering my Beats. Before he got upon the other, he would beat very eagerly; and when he found that he was got up in vain, he would get off, and beat again eagerly, and then up again. From whence I guess these pulsations to be the way whereby these *Insects* wooe one another, and find out, and invite each other to copulation.

This Mr *Allen* hath taken no notice of in his aforementioned  
rela-

relation, and therefore I presume to add it to his accurate account. From which I differ only in what he says concerning the part with which the ticking noise is made, which he says *is the extreme edge of the Face, which may be called the Upper-lip*. But I observed the Insect always to draw back its Mouth, and beat with its Forehead.

The other *Death-Watch*, is an Insect in appearance quite different from the last ; which I lately discovered about the beginning of this *July*. The other *Death-Watch* beateth only about 7 or 8 strokes at a time, and quicker : but this will beat some hours together, without intermission ; and his strokes are more leisurely, and like the Beats of a Watch. I have several years observed these two sorts of Beating, but took it to be made by one and the same Animal.

The *Insect* which makes this long Beating, is a small, greyish Insect, much resembling a *Louse*, when looked on only with the naked Eye. For which reason (for want of another name) I call it *Pediculus Pulsatorius*. It is very nimble in running to seek its shelter, when disturbed. It is very common in all parts of the House, in the Summer months.

They are extremely shy or Beating, when disturbed ; but will beat freely enough before you, and also answer you when you beat, if you can view them, without giving them disturbance, or shaking the place where they lye, &c.

I cannot tell whether they beat in any other thing, but I have heard their noise only in, or near Paper.

Concerning their Noise, I am somewhat in doubt, whether it be made by beating their Heads, or rather Snouts against the Paper : or whether it be not made after some such manner, as *Grashoppers* and *Crickets* make their noise. I rather incline to the former opinion. But my reason of doubting is, because I have observed the Animal's Body to shake, or give a sudden jirk at every stroke, but I could scarce perceive any part of its Body to touch the Paper. 'Tis possible it might beat the Paper, and I not perceive it, by reason its Body is small, and near the Paper when

it beateth, and its motion in beating is sudden, and swift. For which reasons also it is hard to perceive the Insect to Beat, without a very severe Eye : And therefore I made use of a Convex-glass, which by magnifying gave me much better opportunity of observing.

This ticking Noise, I judge (as before) a Wooing act ; by reason I observed another (after much beating) to come, and make offers to the Beating Insect ; who (after some offers) left off his beating, and got up upon the back of that other. When they had conjoyned, he got off again, and they continued some hours joyned tail to tail, like Dog and Bitch in coition. The Female (which I saw) was somewhat bigger than the Male, and lighter in colour (inclining to a yellow :) but whether all are so, I know not.

I have often heretofore, by the noise pursued the makers of it ; but have thought my self disappointed, when I found nothing but some of these *Pediculi*, which I did not perceive to beat, and which I little imagined could have made so sonorous a noise, as I have heard some of them do, even as loud almost as the strongest Beats of a Pocket-Watch. But lately finding a piece of Paper in my Study, in which I was sure the Beating was, and it being luckily loosely folded, so as to be viewed throughout, and also happening to lie in a good light, I strictly viewed it, but could only see some of those *Pediculi*. And viewing them with a Convex-glass, I soon perceived some of them to beat, or to make a noise, with a sudden shake of their Body, as hath been described. And I am now so used to, and skilful in the matter, as to be able to see, and shew their Beating, almost when I please, by having a Paper with some of them in it conveniently placed, and imitating their pulsations ; which they will readily answer.

Whether this Insect changeth its shape, and becometh any other Animal, I know not : but I have some cause (tho very little) to suspect that it becometh a sort of *Fly*.